We claim:

1. A conjugate comprising a drug coupled with an isolated peptide sequence selected from the group consisting of peptide sequences derived from ICAM-1 and LFA-1.

2. The conjugate of claim 1, said isolated peptide sequence having from about 4-30 amino acid residues.

3. The conjugate of claim 1 said isolated peptide sequence selected from the group consisting of SEQ ID Nos. 1-8.

4. The conjugate of claim 3, said peptide differing from that of said isolated peptide sequence selected from the group consisting of SEQ ID. Nos. 1-8 due to a mutation event.

5. The conjugate of claim 4, said mutation event being selected from the group consisting of point mutations, deletions, insertions and rearrangements.

6. The conjugate of claim 1, said drug selected from a class of drugs consisting of antiinflammatory agents, antitumor agents, oligonucleotides, cytokines, enzyme inhibitors, and vasoregulator agents.

7. The conjugate of claim 1 said drug selected from the group consisting of methotrexate, lovastatin, taxol, ajmalicine, vinblastine, vincristine, cyclophosphamide, fluorouracil, idarubicin, ifosfamide, irinotecan, 6-mercaptopurine, mytomycins, mitoxantrone, paclitaxel, taxol, pentostatin, plicamycin, topotecan, fludarabine, etoposide, doxorubicin, doxotaxel, danorubicin, albuterol, and propidium.

8. The conjugate of claim 1, said drug being methotrexate.

9. The conjugate of claim 3, said isolated peptide sequence having at least about 50% homology with at least one of said SEQ ID Nos. 1-8.

10. A method of delivering drugs to leukocytes comprising the steps of:

forming a conjugate comprising a drug and an isolated peptide sequence selected from the group consisting of peptide sequences derived from ICAM-1 and LFA-1 sequences;

contacting a leukocyte, epithelial cell, or endothelial cell with said conjugate; and

causing said conjugate to be internalized within the leukocyte, epithelial cell, or endothelial cell.

11. The method of claim 10, said drug selected from a class of drugs consisting of antiinflammatory agents, antitumor agents, oligonucleotides, cytokines, enzyme inhibitors, and vasoregulator agents.

12. The method of claim 10, said drug being selected from the group consisting of methotrexate, lovastatin, taxol, ajmalicine, vinblastine, vincristine, cyclophosphamide, fluorouracil, idarubicin, ifosfamide, irinotecan, 6-mercaptopurine, mytomycins, mitoxantrone, paclitaxel, taxol, pentostatin, plicamycin, topotecan, fludarabine, etoposide, doxorubicin, doxotaxel, danorubicin, albuterol, and propidium.

13. The method of claim 10, said drug being selected from the group consisting of methotrexate and doxorubicin.

14. The method of claim 10, said isolated peptide sequence having from about 4-30 amino acid residues.

15. The method of claim 10, said isolated peptide sequence being selected from the group consisting of SEQ ID Nos. 1-8.

16. The method of claim 15, said isolated peptide sequence having at least about 50% homology with at least one of said SEQ ID Nos. 1-8.

17. In a method of administering a drug to cells wherein the improvement comprises reducing the toxicity of the drug to non-targeted cells, said method comprising the step of coupling said drug with a peptide.

18. The method of claim 17, said drug selected from a class of drugs consisting of antiinflammatory agents, antitumor agents, oligonucleotides, cytokines, enzyme inhibitors, and vasoregulator agents.

19. The method of claim 17, said drug being selected from the group consisting of methotrexate, lovastatin, taxol, ajmalicine, vinblastine, vincristine, cyclophosphamide, fluorouracil, idarubicin, ifosfamide, irinotecan, 6-mercaptopurine, mytomycins, mitoxantrone, paclitaxel, taxol, pentostatin, plicamycin, topotecan, fludarabine, etoposide, doxorubicin, doxotaxel, danorubicin, albuterol, and propidium.

20. The method of claim 17, said drug being selected from the group consisting of methotrexate and doxorubicin.

21. The method of claim 17, said peptide having from about 4-30 amino acid residues.

22. The method of claim 17, said peptide being selected from the group consisting of SEQ ID Nos. 1-8.

23. The method of claim 21, said peptide having at least about 50% sequence homology with at least one of said SEQ ID Nos. 1-8.

24. A method of treating leukocyte-related diseases comprising the steps of:

conjugating a drug with a peptide sequence derived from the sequence of ICAM-1 in order to produce a peptide-drug conjugate, said peptide sequence being adapted to bind with LFA-1 receptors;

contacting said conjugate with a leukocyte;

causing said conjugate to be internalized by the leukocyte; and

causing said drug to kill the leukocyte.

25. The method of claim 24, said peptide sequence having from about 4-30 amino acid residues.

26. The method of claim 24, said peptide sequence being selected from the group consisting of sequences having at least about 50% sequence homology with at least one of SEQ ID Nos. 1-8.

27. The method of claim 24, said drug selected from a class of drugs consisting of antiinflammatory agents, antitumor agents, oligonucleotides, cytokines, enzyme inhibitors, and vasoregulator agents.

28. The method of claim 24, said drug selected from the group consisting of methotrexate, lovastatin, taxol, ajmalicine, vinblastine, vincristine, cyclophosphamide, fluorouracil, idarubicin, ifosfamide, irinotecan, 6-mercaptopurine, mytomycins, mitoxantrone, paclitaxel, taxol, pentostatin, plicamycin, topotecan, fludarabine, etoposide, doxorubicin, doxotaxel, danorubicin, albuterol, and propidium.

29. A method of treating an epithelial or endothelial cell-related disease comprising the steps of:

conjugating a drug with a peptide derived from LFA-1;

contacting said conjugate with a leukocyte, epithelial cell, or endothelial cell;

causing said conjugate to be internalized by the leukocyte, epithelial, or endothelial cell; and

causing said conjugate to modulate the function of the contacted leukocyte, epithelial, or endothelial cell.

30. The method of claim 29, said disease being selected from the group consisting of asthma, inflammations, Chron's Disease, rheumatoid arthritis, multiple sclerosis, ulcerative colitis, pemphigus vulgaris, pephigoid, allergies, HIV-infections, and epidermolysis.

31. The method of claim 29, said disease being related to an increased expression of ICAM-1.

32. The method of claim 29, said peptide being adapted to bind with ICAM-1 receptors.

33. The method of claim 29, said peptide having from about 4-30 amino acid residues.

34. The method of claim 29, said peptide being selected from the group consisting of sequences having at least about 50% sequence homology with at least one of Sequence ID Nos. 1-8.

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